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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/075,708	02/14/2002	Paul A. Kline	CRNT-0067	8383

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EXAMINER	
LEE, BENJAMIN C	

ART UNIT	PAPER NUMBER
2632	

DATE MAILED: 06/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/075,708	KLINE, PAUL A.	
	Examiner	Art Unit	
	Benjamin C. Lee	2632	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 January 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *61-91* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *61-91* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *11-12*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Response To Amendment

Claim Status

1. **Claims 61-91** are pending.

2. **Claims 61-63, 67-7-, 74-82, 84 and 89-90** are rejected under 35 U.S.C. 103(a) as being unpatentable over Paull (US pat. #3,656,112) in view of Cern (US pat. #6,452,482) and Summerhayes (US pat. #4,070,572).

1) In considering claims 61-63:

Paull discloses a 2-way communication device for communicating over a power line (Fig. 2), comprising: a data signal impedance (203) coupled to the power line; a coupler comprising fist port (207) coupled to the power line on a first side of the data signal impedance and a second port (204) coupled to the power line on the second side of the data signal impedance; and a transceivers (206, 205) coupled to said coupler for communication over a communication medium (wireless link in Fig. 2);

While Cern teaches the use of data modem and data router in a coupler that bypasses a data signal impedance in a power line communication system (Fig. 12), and Summerhayes teaches a known fiber optic cable coupler to a high voltage power line (Fig. 1).

In view of the teachings by Paull and Cern, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention that in order to effectively communicate and receive modulated signal in a system such as taught by Paull, a modem such as taught by Cern is required at the logic circuit. For multiple reply stations communication as is intended by Paull., a router as taught by Cern can be used for multiple destination/source communication by monitoring usage data to direct communication in use to proper respective destinations.

It would have been obvious to one of ordinary skill in the art at the time of the claimed invention that the system of Paull and Cern is applicable or adaptable to power lines of greater than 1000 volts, whereby if adaptation is required, obvious high voltage and/or high current handling measures well known in the art would be utilized.

Furthermore, while the communication medium between the transceivers of the coupler is a wireless link using either acoustic or radio link (col. 3, line 51), Cern teaches that noise isolation in the data signal impedance bypass coupler can further be enhanced by optical isolators in series with the data connection (col. 14, lines 64-67). In view of the teachings by Paull, Cern and Summerhayes, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention that instead of a radio or acoustic link, an optical link such as a well known fiber optic cable link taught by Summerhayes can alternatively be used as said transceiver communication medium in a system such as taught by Paull and Cern that bypasses the data impedance while providing noise isolation, whereby the fiber optic cable may be preferred in certain application environments that is more immune to, and thus isolates, noise better than acoustic or radio links.

2) In considering claim 67, Paull, Cern and Summerhayes made obvious all of the claimed subject matter as in the consideration of claim 61, while:

Cern teaches using a known inductive coupler to the power line (Fig. 12).

It would have been obvious to one of ordinary skill in the art at the time of the claimed invention that a well known inductive coupling such as taught by Cern can be used as the coupler in a system such as taught by Paull, Cern and Summerhayes without unexpected results.

3) In considering claims 68-69, Paull, Cern and Summerhayes made obvious all of the

claimed subject matter as in claim 67, wherein:

--the claimed further steps are met by the 2-way communication between the two transceivers at the two ends of the fiber optic cable in the system of Paull, Cern and Summerhayes.

4) In considering claim 70, Paull, Cern and Summerhayes made obvious all of the claimed subject matter as in the consideration of claim 67.

5) In considering claims 74-75, Paull, Cern and Summerhayes made obvious all of the claimed subject matter as in claim 70, plus the consideration of claims 62-63.

6) In considering claims 76-79, Paull, Cern and Summerhayes made obvious all of the claimed subject matter as in claim 70, wherein:

Summerhayes teaches in an electrically operated transmitter device coupled to a power line the use of a further inductive power coupler for providing power for its components (107, 106 and "transmitter" of Fig. 1).

It would have been obvious to one of ordinary skill in the art at the time of the claimed invention that power for operating the power line communication device components including the transceiver and modem in a system such as taught by Paull, Cern and Summerhayes can be provided in a known way such as taught by Summerhayes, whereby when the communication device components operate in DC power, an obvious AC-DC converter is used.

7) In considering claim 80, Paull, Cern and Summerhayes made obvious all of the claimed subject matter as in the consideration of claim 68.

8) In considering claims 81-82, Paull, Cern and Summerhayes made obvious all of the claimed subject matter as in the consideration of claim 77.

9) In considering claim 84, Paull, Cern and Summerhayes made obvious all of the claimed subject matter as in claim 81, plus the consideration of claim 67.

10) In considering claims 89-90, Paull, Cern and Summerhayes made obvious all of the claimed subject matter as in claim 81, plus the consideration of claims 74-75.

3. **Claims 64-66, 83, 85 and 91** are rejected under 35 U.S.C. 103(a) as being unpatentable over Paull in view of Cern, Summerhayes and Whyte et al. (US pat. #4142,178)

1) In considering claims 64-66, Paull, Cern and Summerhayes made obvious all of the claimed subject matter as in the consideration of claims 61-63, while:

Whyte et al. teaches using a known capacitive coupler to the power line (capacitor coupler 60 of Fig. 1 having same capacitor coupling as 71 in Fig. 3 using capacitor 98 according to col. 7, lines 6-29 for communicatively coupled to the power line 26).

In view of the teachings by Paull, Cern, Summerhayes and Whyte et al., it would have been obvious to one of ordinary skill in the art at the time of the claimed invention that a well known capacitive coupling such as taught by Whyte et al. can be used as the coupler in a system such as taught by Paull, Cern and Summerhayes without unexpected results.

2) In considering claims 83 and 91, Paull, Cern, Summerhayes and Whyte et al. made obvious all of the claimed subject matter as in the consideration of claim 65

3) In considering claim 85, Paull, Cern and Summerhayes made obvious all of the claimed subject matter as in claim 81, plus the consideration of claim 64 further in view of Whyte et al.

4. **Claims 71-73 and 86-88** are rejected under 35 U.S.C. 103(a) as being unpatentable over Paull. in view of Cern, Summerhayes and Toppeto (US pat. #4,263,549).

1) In considering claims 71-73, Paull, Cern and Summerhayes made obvious all of the claimed subject matter as in claim 70, while:

Toppeto teaches that inductively coupling transformer can take the form of toroid shape coil/core and furthermore that in order to promote easy mechanical attachment/removal of the transformer coupler to a cable, a hinged housing is used (col. 2, lines 5-7 and col. 3, lines 27-45).

In view of the teachings by Paull, Cern, Summerhayes and Toppeto, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use a hinged type toroidal transformer such as taught by Toppeto as a specific form of inductive coupler in a system such as taught by Paull, Cern and Summerhayes for ease of mechanical attachment; furthermore, magnetically permeable cores and dielectric materials have been well known for use in a transformer to attain the desire inductive/magnetic characteristics and to provide for its housing support.

2) In considering claims 86-88, Paull, Cern and Summerhayes made obvious all of the claimed subject matter as in claim 81, plus the consideration of claims 71-73 further in view of Toppeto.

Response to Arguments

5. Applicant's arguments with respect to claims 61-91 have been considered but are moot in view of the new ground(s) of rejection, which is necessitated by amendment. See above rejection for detail.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin C. Lee whose telephone number is (703) 306-4223. The examiner can normally be reached on Mon -Fri 11:00Am-7:30Pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Wu can be reached on (703) 308-6730. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Benjamin C. Lee
Primary Examiner
Art Unit 2632

B.L.
5/31/04